Waves, Wetlands and Watersheds
EP&C Learning Objectives Alignment

3rd GRADE	Activity 3.1: Wetlands at Work	Activity 3.2: Marsh Munchers	Activity 3.3: The Perfect Beak
Science Content Standards **3. Life Sciences** Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:			
3.a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction		EP&C Learning Objectives: • Identify that plants and animals have different structures that allow them to grow, survive, and reproduce by using/consuming the goods and ecosystem services provided by natural systems. • Recognize that growth, survival, and reproduction are necessary for the survival of plants and animals, as well as the survival of humans and human communities. • Explain that the growth, survival, and reproduction of plants and animals processes can be influenced by human activities.	EP&C Learning Objectives: • Identify that plants and animals have different structures that allow them to grow, survive, and reproduce by using/consuming the goods and ecosystem services provided by natural systems. • Explain that the growth, survival, and reproduction of plants and animals processes can be influenced by human activities.
3.c. Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organisms or other organisms, and some are beneficial.	EP&C Learning Objectives: • Identify how living things (including humans) can cause changes in the environments in which they live. • Provide examples of changes to the environment caused by living things that are beneficial, detrimental or neutral in their effects on other organisms. • Explain how changes to the environment, brought about by an organism, may harm that organism or other organisms. • Provide examples of large-scale changes to ecosystems that result from human activities and natural events.	EP&C Learning Objectives: • Identify how living things (including humans) can cause changes in the environments in which they live. • Explain how changes to the environment, brought about by an organism, may harm that organism or other organisms. • Provide examples of large-scale changes to ecosystems that result from human activities and natural events.	
3.d. Students know when the environment changes some plants and animals survive and reproduce; others die or move to new locations.	EP&C Learning Objectives: • Recognize that when the environment changes, some plants and animals will die or move to new locations because the natural system can no	EP&C Learning Objectives: • Recognize that when the environment changes, some plants and animals will die or move to new locations because the natural system can no	EP&C Learning Objectives: • Recognize that when the environment changes, some plants and animals will die or move to new locations because the natural system can no longer meet their

	longer meet their needs.	longer meet their needs. • Explain that not all organisms respond to environmental changes in the same way.	needs. • Explain that not all organisms respond to environmental changes in the same way.
History-Social Science Content Standards **3.1.** Students describe the physical and human geography and use maps, tables, graphs, photographs, and charts to organize information about people, places, and environments in a spatial context.			
3.1.2. Trace the ways in which people have used the resources of the local region and modified the physical environment (e.g., a dam constructed upstream changed a river or coastline).	EP&C Learning Objectives: • Recognize the ways that people use the resources (goods and ecosystem services) that are provided by the ecosystems (natural systems) in their local region. • Identify the ways humans have changed the natural systems (physical and living environment) in their local region to extract, harvest, transport and consume natural resources (goods and ecosystem services). • Provide examples of how the extraction, harvesting, transportation and consumption of natural resources have influenced the natural systems in the local region. • Explain that some changes to the natural systems are detrimental while others may be beneficial or neutral in their effects.		

5th GRADE	**Activity 5.1: A Drop in the Bucket**	**Activity 5.2: Alice in Waterland**	**Activity 5.3: Branching Out**
Science Content Standards **3. Earth Sciences** Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:			
3.a. Students know most of Earth's water is present as salt water in the oceans, which cover most of Earth's surface.	EP&C Learning Objectives: • Identify that humans are living things and clean fresh water is essential to their survival. • Recognize that because most of Earth's water is salt water located in the oceans, the vast majority of water is not available for human consumption. • Explain how humans and human communities can influence the quantity, distribution and chemical characteristics of the water		EP&C Learning Objectives: Explain how humans and human communities can influence the quantity, distribution and chemical characteristics of the water in freshwater, coastal and marine ecosystems (e.g., global climate change, water management practices).

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3.d. Students know the amount of fresh water located in rivers, lakes, underground sources, and glaciers is limited and that its availability can be extended by recycling and decreasing the use of water.	EP&C Learning Objectives: • Identify sources of fresh water and describe the reservoirs of Earth's water. • Describe the ways in which humans, human communities and their practices use water. • Recognize that the supply of fresh water is limited at any given time and discuss how some resources within an ecosystem are finite in supply while others are less limited. • Explain potential consequences when the quantity, distribution or chemical characteristics of water are changed (e.g., contamination of an aquifer can compromise the use of the groundwater supply by humans and other organisms).	EP&C Learning Objectives: • Identify sources of fresh water and describe the reservoirs of Earth's water. • Describe the ways in which humans, human communities and their practices use water. • Describe the methods by which wastewater can be treated and cycled back into the environment. • Provide examples of how water use can be decreased by humans and human communities. • Explain potential consequences when the quantity, distribution or chemical characteristics of water are changed (e.g., contamination of an aquifer can compromise the use of the groundwater supply by humans and other organisms). • Describe how changes to the quantity, distribution and chemical characteristics of water in natural systems can influence the functioning of terrestrial, freshwater, coastal and marine ecosystems (e.g., acid precipitation affecting the growth of trees).	EP&C Learning Objectives: • Identify sources of fresh water and describe the reservoirs of Earth's water. • Recognize that water moves from one reservoir to another over time. • Explain potential consequences when the quantity, distribution or chemical characteristics of water are changed (e.g., contamination of an aquifer can compromise the use of the groundwater supply by humans and other organisms).
3.e. Students know the origin of the water used by their local communities.		EP&C Learning Objectives: • Identify sources of fresh water in their local community. • Describe the process by which water is supplied to students' homes and their community. • Identify the steps used to make water potable in their community. • Describe the ways in which humans use water in their local community. • Provide examples of how human activities can influence the quantity, quality and reliability of water supplies. • Explain how changes to the quantity, quality and reliability of water supplies can influence humans,	EP&C Learning Objectives: • Identify sources of fresh water in their local community. • Provide examples of how human activities can influence the quantity, quality and reliability of water supplies.

		human communities and their practices.	

6th GRADE	Activity 6.1: Beaches—Here Today, Gone Tomorrow?	Activity 6.2: Shifting Sands	Activity 6.3: Rollin' Down the Sand Highway
Science Content Standards **2. Earth Sciences** Topography is reshaped by weathering of rock and soil and by the transportation and deposition of sediment. As the basis for understanding this concept:			
2.c. Students know beaches are dynamic systems in which the sand is supplied by rivers and moved along the coast by the action of waves.	EP&C Learning Objectives: • Identify how humans and human communities benefit from the dynamic systems of beaches in ways that support our economies and cultures (e.g., housing development, sand supplies). • Describe how human communities are influenced by the sand that is supplied by rivers and moved along the coast by the action of waves. • Provide examples of how human activities can influence the movement of sand and the formation of beaches.	EP&C Learning Objectives: • Identify how humans and human communities benefit from the dynamic systems of beaches in ways that support our economies and cultures (e.g., housing development, sand supplies). • Describe how human communities are influenced by the sand that is supplied by rivers and moved along the coast by the action of waves. • Provide examples of how human activities can influence the movement of sand and the formation of beaches.	EP&C Learning Objectives: • Identify how humans and human communities benefit from the dynamic systems of beaches in ways that support our economies and cultures (e.g., housing development, sand supplies). • Describe how human communities are influenced by the sand that is supplied by rivers and moved along the coast by the action of waves. • Provide examples of how human activities can influence the movement of sand and the formation of beaches.

7th GRADE	Activity 7.1: What's So Special About Native Species?	Activity 7.2: Adapted for Survival?	Activity 7.3: Survivor: California
Science Content Standards **3. Evolution** Biological evolution accounts for the diversity of species developed through gradual processes over many generations. As a basis for understanding this concept:			
3.a. Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms.	EP&C Learning Objectives: • Identify the role of environmental factors on the evolution and diversity of organisms, and the long-term functioning and health of natural systems. • Provide examples of how human population growth and human activities (e.g., expansion of communities, production and consumption of natural resources, the operation	EP&C Learning Objectives: • Identify the role of environmental factors on the evolution and diversity of organisms, and the long-term functioning and health of natural systems. • Provide examples of how human population growth and human activities (e.g., expansion of communities, production and consumption of natural resources, the	EP&C Learning Objectives: • Define evolution and identify its causes. • Describe the influence of genetic variation on the evolution and diversity of organisms. • Identify the role of environmental factors on the evolution and diversity of organisms, and the long-term functioning and health

	and expansion of human communities, and generation of byproducts) can affect both genetic variation and environmental factors). • Describe how human activities can affect reproductive cycles and genetic diversity, and thus, the evolution and diversity of species.	operation and expansion of human communities, and generation of byproducts) can affect both genetic variation and environmental factors). • Describe how human activities can affect reproductive cycles and genetic diversity, and thus, the evolution and diversity of species.	of natural systems. • Provide examples of how human population growth and human activities (e.g., expansion of communities, production and consumption of natural resources, the operation and expansion of human communities, and generation of byproducts) can affect both genetic variation and environmental factors). • Describe how human activities can affect reproductive cycles and genetic diversity, and thus, the evolution and diversity of species.
3.e. Students know extinction of a species occurs when the environment changes and adaptive characteristics of a species are insufficient for its survival.	EP&C Learning Objectives: • Explain the effects of changing environmental factors in a natural system on species (e.g., changing biotic and abiotic factors including the availability of resources). • Identify factors that can cause extinction of a species and explain that some extinctions are natural while others are human-induced. • Recognize that throughout the history of life on Earth, some plants and animal species have died out completely in response to environmental changes. • Provide examples of how human population growth and expansion of communities, production and consumption of natural resources, and the operation and expansion of human communities can influence rates of extinction. • Describe how the capacity of natural systems to adjust to human-caused alterations depends on the scope, scale, and duration of the activity, and on the nature and health of the natural system. • Identify that in cases where species cannot respond to the degree of change, extinction may occur.	EP&C Learning Objectives: • Define and give examples of adaptation in living things. • Explain the effects of changing environmental factors in a natural system on species (e.g., changing biotic and abiotic factors including the availability of resources). • Identify factors that can cause extinction of a species and explain that some extinctions are natural while others are human-induced. • Recognize that throughout the history of life on Earth, some plants and animal species have died out completely in response to environmental changes. • Provide examples of how human population growth and expansion of communities, production and consumption of natural resources, and the operation and expansion of human communities can influence rates of extinction. • Describe how the capacity of natural systems to adjust to human-caused alterations depends on the scope, scale, and duration of the activity, and on the nature and health of the natural system. • Identify that in cases where species cannot respond to the degree of change, extinction may occur.	EP&C Learning Objectives: • Define and give examples of adaptation in living things. • Explain the effects of changing environmental factors in a natural system on species (e.g., changing biotic and abiotic factors including the availability of resources). • Identify factors that can cause extinction of a species and explain that some extinctions are natural while others are human-induced. • Recognize that throughout the history of life on Earth, some plants and animal species have died out completely in response to environmental changes. • Provide examples of how human population growth and expansion of communities, production and consumption of natural resources, and the operation and expansion of human communities can influence rates of extinction. • Describe how the capacity of natural systems to adjust to human-caused alterations depends on the scope, scale, and duration of the activity,

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